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The
United
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jc598 U.S. PTO
09/484260
01/18/00

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to any statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extension.

Bruce Lehman
Commissioner of Patents and Trademarks

Attest
Andrea Morton



US00500514A

United States Patent [19]

Gipson

[11] Patent Number: 5,839,514

[45] Date of Patent: Nov. 24, 1998

[54] **METHOD AND APPARATUS FOR
INJECTION OF TUBING INTO WELLS**

4,673,035	6/1987	Gipson	166/77.2
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[73] Assignee: Fleet Cementers, Inc., Cisco, Tex.

[21] Appl. No.: 862,745

[22] Filed: May 23, 1997

[51] Int. Cl. 6 E21B 19/22

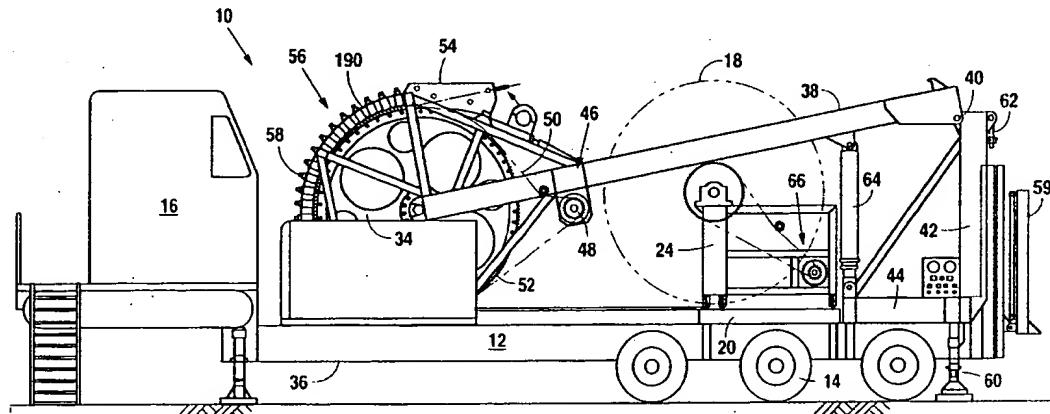
[52] U.S. Cl. 166/384; 166/77.2; 166/85.5;
242/399.1; 242/596.3; 254/288; 254/332;
254/333[58] Field of Search 166/77.2, 77.1,
166/85.5, 384, 385; 242/399.1, 399.2, 596.3;
254/281, 288, 326, 332, 333[56] **References Cited**

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Primary Examiner—George Suchfield*Attorney, Agent, or Firm*—Miller, Sisson, Chapman & Nash, P.C.[57] **ABSTRACT**

An improved apparatus and method for injecting and retrieving a length of coiled tubing and storing the tubing on a storage spool. An injector reel is pivotally mounted on a frame such that coiled tubing may be angularly injected to shallow, horizontal wells. A hold-down assembly is provided to individually adjust the pressure applied to the coiled tubing as it is injected into or retrieved from a well. The positioning of the injector reel and the storage spool in the injecting mode ensures a greater degree of wrapping of the coiled tubing around the injector reel to improve the control of the injection and retraction of the tubing. A vertically and horizontally adjustable storage spool cradle enables the operator to vary the width and diameter of the storage spools used in the apparatus.

11 Claims, 8 Drawing Sheets

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